

**American Fiscal Policy in the Post-War Era:
An Interpretive History**

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I. Introduction

From a macroeconomist's perspective, the central issue surrounding fiscal policy has traditionally been its efficacy as a tool for stabilization. This focus on aggregate activity typically has led to a parallel concentration on fiscal aggregates: revenues, spending, and deficits. But a focus on aggregates masks significant changes that have occurred over the post-war years in U.S. fiscal policy. Some of these changes, in turn, have consequences for the practice of stabilization and budget policy. Given the continuing evolution in the composition of revenues and spending, a look below the surface will provide some insight into the future challenges to the practice of fiscal policy.

This paper begins, in the next section, with an overview of U.S. fiscal policy during the post-war period. Section III considers the determinants of fiscal policy actions over this period, asking in particular how business cycle and budget conditions have affected tax and spending behavior. Section IV provides a discussion of how the changing composition of spending, from discretionary spending to old-age entitlements, is likely to affect short-run spending behavior, and also how this shift affects budget sustainability how we judge this sustainability.

II. A Brief Overview

A. Spending

Since 1962¹, federal spending (excluding interest) has been relatively stable as a fraction of GDP. As seen in Figure 1, this share has ranged between just over 16 percent and just under 20 percent throughout the period. But the overall share's relative stability masks considerable changes in spending components. Defense spending has been trending steadily downward from a peak of nearly 10 percent at the height of the Vietnam War, with interruptions in this trend during the first half of the Reagan Administration and since September 11, 2001. Non-defense discretionary spending rose during the mid-1960s and again in the mid-1970s and fell sharply at the beginning of the Reagan administration, but has maintained a roughly constant share of spending since 1986, between 3.3 and 3.8 percent of GDP.

The main spending growth over the post-war period has occurred in entitlement programs, which grew sharply in the '60s and '70s and continued growing, albeit more slowly, for the remainder of the period. Entitlement spending has more than doubled as a share of GDP since the early 1960s, absorbing the "peace dividends" provided by the conclusions of the Vietnam and Cold Wars. Figure 2 shows spending on the three main entitlement programs,

¹ The historical data in Figure 1, and the next three figures, are from CBO (2004), which provides historical fiscal data since 1962.

Social Security, Medicare and Medicaid, over the same period. While spending as a share of GDP on these fast-growing programs stabilized for a time in the 1990s, in part because of the economy's fast growth during this period, growth relative to GDP has resumed; and, as long-range projections make quite clear, these programs, as currently structured, will continue to grow quite rapidly relative to GDP for the foreseeable future. Within these three programs, the share going to medical care has been steadily increasing, to the point that combined federal spending on Medicare and Medicaid is now nearly as high as that on Social Security.

Over the last four decades, then, federal spending has been relatively stable as a share of GDP, with this stability produced by offsetting trends in defense spending (down) and entitlement spending (up), as other discretionary spending has remained relatively constant.

Over shorter periods, the trends have varied. During most the Reagan years, cuts in non-defense spending balanced a temporary defense build-up. Throughout the George H.W. Bush and Clinton administrations, sharply falling defense spending more than offset entitlement growth, and aggregate spending fell as a share of GDP. During the George W. Bush administration, spending in all three areas has grown as a share of GDP, for the first time since Johnson administration's simultaneous pursuit of the Great Society and the Vietnam War.

B. Revenues

As with spending, federal revenues have been more stable in the aggregate, as a share of GDP, than have the important revenue components. Prior to the late 1990s, revenues ranged between 17 and 20 percent of GDP, the stability provided by offsetting trends in payroll taxes, which rose with the growth of the Medicare and Social Security systems to which payroll taxes are dedicated, and corporate income and other taxes, which fell. There were several important structural changes in the individual income tax that reduced marginal tax rates, notably in 1964 and 1986. Nevertheless, the individual income tax shows little trend, although it has risen over short periods, as during the late 1970s, when bracket creep and high inflation drove average tax rates up, and even more throughout the mid-to-late '90s, as income at the top of the taxable income distribution exploded with the economy and the stock market. Neither of these spurts in individual income tax revenues was sustained, the first being reversed by the massive cut in individual income tax rates included in the Economic Recovery Tax Act of 1981, the second by a series of tax cuts starting in 2001 and the stock market “correction” that began in 2000.

Indeed, the years since 2000 have experienced a remarkably sharp drop in individual income taxes (as a share of GDP) – from 10.3 percent in fiscal year 2000 to 7.3 percent in fiscal year 2003. Further, this enormous drop in individual income taxes since 2000 has been accompanied by sustained declines, as a share of GDP, in each of the other revenue categories.

In all, revenues fell from 20.9 percent in fiscal year 2000 to 16.5 percent in 2003, the highest and lowest shares of GDP, respectively, during the entire period since 1962.

The downward trend in “other” taxes reflects the declining use of indirect taxes as a source of revenue, a continuation of a trend of much longer duration. The modest level of corporate tax collections has received renewed attention of late, but the biggest decline, as a share of GDP, occurred between the late 1960s, when corporate taxes reached 4 percent of GDP, and the early 1980s.² Since 1983, corporate tax collections have ranged between 1.1 and 2.2 percent of GDP. During the last two decades, corporate taxes rose slightly after the Tax Reform Act of 1986, which shifted the tax burden from individuals to corporations, and again in the late 1990s, with the economy’s strong growth. The recent weakness in corporate tax collections is clearly due in part to overall economic performance. Innovations in tax avoidance techniques, including the use of off-shore transactions, have also been implicated, although there is no precise estimate of the importance.

C. Deficits

Figure 4 brings together the post-war trends in spending and revenues to show the evolution of the federal government’s budget deficits, as a share of GDP. The strong growth in

² For an analysis of the causes of this decline, see Auerbach and Poterba (1987).

spending and the sharp decline in revenues over the past few years, just discussed, contribute to a remarkable drop in the federal budget surplus, from a high of nearly 2.5 percent in fiscal year 2000 to a deficit of 3.5 percent just three years later, a swing of almost 6 percent of GDP. This deterioration follows an equally remarkable eight-year rise that began in 1992.

Also represented in the figure is the full-employment surplus (as estimated by CBO), which is less volatile. As a comparison of these two series indicates, the strong surpluses of the late 1990s were attributable, in part, to strong economic performance, although the full-employment surplus in fiscal year 2000, at just over 1 percent of GDP, is still the highest value achieved over the entire period. Only a small part of the deterioration since then is directly attributed to the business cycle by CBO. The current budget deficit as a share of GDP, even when adjusted, is still smaller than in the mid-1980s. That is, taken in historical context, the 2003 budget deficit does not stand out, even though most of it remains after cyclical factors are removed.

III. What Has Caused Policy to Change?

Over the longer term, the trends in various revenue sources and spending programs often have clear explanations, rooted in policy objectives and changing economic and demographic factors. For example, we have been turning away from indirect taxes as a revenue source for many decades, as our ability to collect direct taxes has improved; an aging population and

steadily increasing per capita medical spending have contributed to prolonged and rapid growth in Medicare spending. Over the shorter term, though, other political and economic objectives may influence changes in policy, and it is interesting to consider the strength of these different influences. A fundamental challenge to doing so, however, is the difficulty of identifying the magnitude and timing of policy changes, both of which are important in considering the macroeconomic effects of policy.

A. Automatic Stabilizers

Since the seminal paper by Brown (1956), it has been understood that measuring the magnitude of policy changes requires that one control for changes that are not policy-driven. Increases in spending and, especially, declines in revenues that come about as a direct consequence of recession represent the automatic stabilizers implicit in policy. These automatic stabilizers, of course, may influence the magnitude of economic fluctuations, but they are not in any sense changes in the course of policy. Indeed, for those skeptical of the government's ability to time fiscal changes and effectively practice discretionary fiscal policy, automatic stabilizers provide at least some scope for countercyclical fiscal actions.

On the tax side, a key measure is the change in taxes with respect to a unit change in aggregate income. This may be roughly proxied by the tax share of GDP, but the two coincide only if the tax system is a proportional one, which ours is not. Changes in the structure of

taxation and in the distribution of income can affect the strength of automatic stabilizers independently of the tax share of GDP. Given the changes that have occurred over the past several decades in the relative importance of different taxes, the progressivity of the individual income tax, and the income distribution, the relative stability of aggregate revenues as a share of GDP seen in Figure 3 does not necessarily imply a similar stability in the strength of tax-based automatic stabilizers.

Figure 5 presents estimates, for the period 1960-1997, of the response of individual income and payroll taxes, the two most important revenue categories, to a unit change in income. (The figure updates one in Auerbach and Feenberg (2000) and is based on the methodology developed there.) There are several factors at work influencing this measure. Some, such as the widening dispersion of the income distribution, should have increased the sensitivity of taxes to income, given the progressive individual income tax rate structure. Other changes, such as the various rounds of marginal tax rate cuts that began in 1964 and continued in 1981 and 1986, should have decreased the sensitivity of taxes to income, as should the inflation indexing provision of the 1981 Act (which took effect in 1985), to the extent that one assumes (as this calculation does) that inflation is sensitive to cyclical income changes.

All in all, though, the measure in the late 1990s stands roughly where it did in the early 1960s. The tax cut of 1964 had a relatively small impact, given the very high incomes at which

previous top marginal rates had applied. The 1981 and 1986 Acts had more noticeable impacts, but these simply undid the very large rise in sensitivity that had occurred during the 1970s as a result of bracket creep. The 1993 tax increase had a small effect and, if the figure was extended to the present, this increase would probably have been more than undone by the tax cuts of 2001 and 2003.³

B. Further Adjustments

It is common to use changes in the full-employment deficit to measure changes in discretionary fiscal policy, given that these changes have been purged of the effects of automatic stabilizers. But there are considerable problems with this interpretation, as the following case study from the period leading up to September 11, 2001 illustrates.

As we now know, the economy had gone into recession several months prior to September 11, and the weakening economy contributed to the declining budget surplus. As Figure 6 shows, the full-employment surplus was relatively stable through the second quarter of 2001, while the unadjusted surplus was declining. However, the sharp drop in the surplus during the third quarter of 2001 is only slightly weakened by the full-employment adjustment,

³ Auerbach (2002) constructs an alternative time series for the strength of automatic stabilizers, based on CBO's full-employment deficit series. That series has different year-to-year patterns but has the same general shape over time, with the value in 2001 slightly below the value in 1960.

suggesting that a major expansionary policy change occurred during this quarter, either just before or just after September 11.

But what was this “policy” change? There were few changes in spending programs during the period, but there were two factors, other than the economic slowdown, contributing to a decline in revenues. One was the phase-in of the Economic Growth and Tax Relief Reconciliation Act (EGTRRA), enacted in spring, 2001. The other was the sharp decline in revenues attributable neither to legislation nor to the economic slowdown, and hence categorized by CBO as “technical” changes. Due to such causes as the decline in the stock market and the resulting drop in taxes on capital gains and compensation options, CBO (2002) revised downward its annual revenue forecasts by about \$50 billion from those reported during the summer of 2001.

Thus, the large apparent change in discretionary policy that occurred during the third quarter of 2001 derives largely from two sources; one was a policy change adopted earlier in the year, another was not a policy change at all. Clearly, the second source should not be counted as a change in policy; as to the first, some of the effects of policy might have been delayed until taxes actually were reduced, but this is not relevant if we are seeking to understand the determinants of policy *decisions*.

C. An Alternative Measure of Policy Changes

To avoid counting previously announced policy changes and changes in the budget that are not attributable to policy at all, I rely on a measure developed in Auerbach (2002, 2003), based on explicit policy changes. As described more fully in those papers, the changes in revenue and expenditure policy come from successive CBO forecasts that attribute changes from the previous forecasts of revenue and expenditures to legislative action, changes in macroeconomic projections, and changes in other economic factors not captured by macroeconomic projections. Thus, they measure changes in the government's explicit policy trajectory that occurred during the period.

The available information provides a continuous, roughly semiannual series (summer to winter and winter to summer) of policy changes in revenues and expenditures, beginning with changes between winter and summer, 1984. As each update includes policy changes for the current fiscal year and several subsequent years, I construct a summary measure equal to the discounted sum of the current fiscal year's change and that for the next four fiscal years, using a discount rate of .5⁴

⁴ This high discount rate is chosen based on goodness-of-fit criteria. Because policy revisions between the winter and summer take effect starting midway through the current fiscal year, I reduce the weight on the current fiscal year by one-half and increase weights on subsequent years correspondingly, for winter-to-summer revisions.

This measure of policy changes has its own problems, of course. Perhaps most notable is that even policies specified by legislation need not be credible. Indeed, in recent years, the credibility of legislative changes to the tax code has been intentionally undercut by the use of “sunset” provisions. These provisions repeal tax cuts after a specified number of years, in many cases where those crafting the legislation have made quite explicit their intent that the provisions be permanent.⁵

Such a legislative maneuver may be understood as a response to the multi-year budget window used to evaluate and constrain tax legislation; changes that are intended to be permanent may be enacted at a lower measured revenue cost if they are scheduled to expire during the budget window.⁶ But if the changes are intended to be permanent, and these intentions are credible, then it is not clear how the policy change in years beyond the sunset should be treated. Presumably, at least some weight should be given to an extension of the policy. Fortunately, the relatively short policy period (five years) considered, along with the heavy discounting of the policy changes for future fiscal years, makes this issue relatively unimportant here.

⁵ See Gale and Orszag (2003).

⁶ See Auerbach (2005) for further discussion.

D. Empirical Results

The first column of Table 1 presents a regression with this summary measure of policy changes in revenue as the dependent variable, with the previous quarter's GDP gap and the previous fiscal year's surplus as explanatory variables. (All variables are scaled by the contemporaneous CBO estimate of potential GDP.) The second column of the table presents the same regression, except that the dependent variable is policy changes to non-interest expenditures. In both equations, the coefficients indicate that policy has responded in a countercyclical manner, and has been responsive to budget conditions as well. The responsiveness in the two equations is of roughly the same order of magnitude. The coefficients suggest that about 12 percent of an increase in the budget surplus is immediately eroded by tax cuts and spending increases.

One of the advantages of this data source is that it provides projections of the budget surplus, under existing policy, which may be a more accurate measure of fiscal conditions than the lagged budget surplus. Using a weighted average of the lagged surplus and the projections of surpluses for the current and next three fiscal years⁷, I construct an alternative measure of fiscal conditions. The results for revenues and expenditures using this alternative measure are in the

⁷ The weighting scheme is the same as that used for the dependent variables.

third and fourth columns of Table 1. The results for revenues are similar to those based on the lagged surplus, while the fit for expenditures is better, and the estimated coefficients larger.

Using these estimates, it is interesting to consider when policy has followed these simple feedback rules, and when it has deviated. Figure 7 presents residuals for the equations in the third and fourth columns of Table 1. On the spending side, there are notable negative shocks during the Gramm-Rudman period in the late '80s. The fall, 1990 budget agreement between President Bush and Congress produced a positive revenue shock and a negative spending shock, both contributing to smaller subsequent deficits. The 1993 Clinton tax increase produced a positive revenue shock, but there were few other surprises during the Clinton period. Policy volatility returned during the current Bush administration, with the tax cuts of early 2001 and early 2003 producing large negative revenue shocks. The 2003 shock is larger than the 2001 shock, even though the 2001 tax cut was bigger, because of the different budget situations in the two years. When the 2001 tax cut occurred, there was a large budget surplus, and President Bush argued that it was the taxpayers' money and should be returned to them. When the 2003 tax cut occurred, the surplus was gone, replaced by a deficit, but tax cutting continued.

Also notable about the first part of 2003 is the large contemporaneous positive shock to spending. Note that this spending shock is due primarily to large increases in defense and non-defense discretionary spending. It does not include the introduction of the Medicare drug benefit

in the fall of 2003, which does not register as a large change because its major budget impact will not be felt in the next few years.

Do recent fiscal actions indicate a change in behavior? With so short a sample of observation, it is difficult to tell. As the last four columns of Table 1 show, if one breaks the entire sample period down by Presidential party (i.e., Reagan, Bush, and Bush vs. Clinton), the estimated behavioral responses are relatively similar across parties. The estimates suggest stronger responsiveness by Republicans to both the GDP gap and the projected surplus, for both revenues and expenditures. These differences, though, are not significant. The differences in intercepts indicate that, for a zero budget surplus and a zero GDP gap, Republicans would increase spending more than Democrats, and cut taxes more. It follows that, for conditions like those in the spring of 2001, when the budget was in surplus and there was a positive GDP gap, the predicted Republican response involves larger tax cuts and higher spending than the predicted Democratic response. Thus, some of the recent behavior may simply reflect a return to a Republican policy rule, but, again, it is hard to be very certain given the short period of observation. The real test will come during the next few years, as we observe how the government's tax and spending policies respond to the very large budget deficits that they have helped create, in a period of relative economic prosperity.

E. Determinants of Structural Policy Changes

Although it is common to focus on aggregate changes in spending and revenues, structural policy changes are important as well. Some important tax reforms, such as the Tax Reform Act of 1986, was designed to be revenue-neutral, while attempting to change incentives to work, to allocate and finance capital, and engage in tax avoidance transactions. While one may apply a similar methodology to that used above to study changes in particular incentives⁸, the tax changes are generally difficult to summarize using concise measures suitable for econometric analysis. This leaves the case study as an alternative to understand the timing and shape of structural tax changes.

Much writing has been devoted to understanding the economic and political factors that precipitated the major tax changes of the 1980s, both occurring under President Reagan, the Economic Recovery Tax Act of 1981, and the Tax Reform Act of 1986.⁹ Equally challenging to summarize and explain is the reform process since then, as marginal tax rates crept upward until 2001 and gaps in the taxation of different forms of income (notably the favorable treatment of capital gains) reappeared.

⁸ For example, Auerbach (2003) relates changes in the user cost of capital for U.S. business fixed investment to lags in the output gap and the budget surplus, as well as to lagged investment. The results suggest that, as with aggregate revenues, investment incentives are responsive to cyclical and budget conditions.

⁹ See, e.g., Steuerle (1992).

IV. Implications of the Evolving Public Sector

Figures 1 and 2 above showed that entitlement spending, particularly spending on Social Security, Medicare, and Medicaid, have been growing rapidly over the past few decades, accounting for a larger and larger share of total federal spending. There is little to suggest that this process will abate any time soon. Figure 8 provides the most recent intermediate projections by the Social Security and Medicare Trustees of benefits for their respective programs, as a share of GDP, through 2080. According to the projections, these two programs alone would, if not altered, account for more of GDP in 2080 than has all federal combined in any year shown in Figure 1. Recent long-term projections for Medicaid (CBO 2003) paint a similar picture for growth of that program through 2050 as for Medicare.

In this paper's context, there are at least three important issues raised by this strong and persistent trend in entitlement spending. First, what are the implications for the feasibility of fiscal policy? Second, how will short-run policy responses be influenced by the changing composition of spending? Third, how does this shift in spending affect the meaning of standard measures of fiscal balance and fiscal policy, such as the budget surplus?

A. Policy Feasibility

The answer to the first of these questions is simple. Given the Trustees' projections for Social Security and Medicare and CBO's projections for Medicaid, current U.S. fiscal policy

clearly is unsustainable. Table 2 presents a variety of measures of how far policy is from being sustainable, all from recent calculations provided by Auerbach, Gale and Orszag (2004).

The first two columns of Table 2 are based on the assumption that the current CBO baseline for taxes and spending as a share of GDP prevails through 2014, with taxes and all non-interest spending components other than Social Security, Medicare and Medicaid growing with GDP thereafter. The last two columns adjust this baseline to incorporate more realistic assumptions for the next decade about discretionary spending growth (e.g., that discretionary spending grows with prices and population) and taxes (that sunset provisions do not take effect and that the Alternative Minimum Tax is not allowed to affect a growing share of taxpayers).

The first row of Table 2 presents estimates of the permanent increase in the primary surplus needed to make policy feasible, under these two baselines. Columns 1 and 3 measure this necessary increase over the period 2004-2080, where feasibility is associated with achieving the same debt-GDP ratio in 2080 as in 2004. Columns 2 and 4 measure the necessary increase over the infinite horizon, identifying the permanent increase in the primary surplus-GDP ratio needed for the present value of revenues to equal the present value of spending plus the initial stock of publicly held national debt.

Under the official baseline assumptions, the fiscal gap through 2080 is 4.6 percent of GDP. This implies that an immediate increase in taxes or cut in spending of 4.6 percent of GDP

– or almost \$500 billion per year in current terms – would be needed to maintain fiscal balance through 2080. The fiscal gap is larger under the adjusted baseline, because it assumes a lower level of revenue and a higher level of discretionary spending than the official baseline. Under the adjusted baseline, the fiscal gap through 2080 amounts to 7.2 percent of GDP. The fiscal gap is even larger if the time horizon is extended, since the budget is projected to be running substantial deficits in years approaching and after 2080. If the horizon is extended indefinitely, the fiscal gap rises to 7.7 percent of GDP under the official baseline and 10.5 percent of GDP under the adjusted baseline. The required adjustments represent substantial shares of current spending or revenue aggregates. A fiscal adjustment of 7.7 percent of GDP, for example, translates into a reduction in spending of 29 percent or an increase in revenues of 40 percent.

One may also express these measures in absolute terms rather than as a share of GDP, by calculating the present value of the required increases in the primary surplus. This alternative method of presentation has recently been suggested by Gokhale and Smetters (2003), as a way of emphasizing how large the total imbalance is relative to the explicit national debt. These numbers are presented in the second row of Table 2, for the same assumptions as those in the first row of the respective columns.

B. Changing Short-Run Fiscal Behavior

A problem that must be faced in attempting to deal with this large fiscal gap is that entitlement programs are more difficult to change than other types of spending. Particularly when old-age programs such as Social Security and Medicare are concerned, long-range planning is involved on the part of beneficiaries, and this translates into the need for long-range planning for changes on the part of government. This suggests that short-run fiscal adjustments on the spending side should be smaller now than in the past, and should be smaller still in the future.

In illustration of this point, Table 3 presents regressions to explain annual changes in spending on discretionary items and on Social Security, Medicare, and Medicaid as a share of full-employment GDP. The independent variables, as before are the lagged values of the budget surplus, as a share of GDP, and the full-employment gap.¹⁰ As shown in the first three columns of Table 3, over the full available sample period, 1963-2003, total discretionary spending was responsive to both explanatory variables, although neither coefficient is significant. Excluding defense spending, which clearly has other important determinants as well, reduces standard

¹⁰ The use of actual spending data is necessary because there is not a consistent breakdown by category in the CBO policy data used in Table 1. There is a potential problem that actual spending data will include changes that might be the automatic result of cyclical factors. This should not be a major concern, though, given that most automatic responses at the federal level are on the tax side or in entitlement programs other than those considered in Table 3.

errors substantially, making the budget surplus coefficient statistically significant. Note, though, that spending on the three major entitlement programs bears essentially no relationship to these same determinants; indeed, the coefficients, while insignificant, are actually negative.

Given that Medicare didn't even exist in 1963, and that budget rules governing discretionary spending have varied a lot over the full period, a look over a shorter, more recent period may be advisable. The last three columns of Table 3 present results since 1993. The coefficients for both discretionary spending aggregates are much larger and more significant over this period, indicating considerable responsiveness. Even the major entitlements now show some responsiveness to the budget and the business cycle, but these effects are still insignificant, and are much smaller in magnitude, relative to the corresponding average level of spending over the sample period.

C. The Meaning of Traditional Fiscal Measures

In the fall of 2003, Congress enacted a major expansion of the Medicare program, the new Part D that will provide partial payment for prescription drugs for Medicare beneficiaries. Although there was considerable controversy over its cost over the official 10-year budget window, the short-run cost pales in comparison the long-run cost, because (1) the program is not fully effective immediately, and (2) like the rest of Medicare, the annual cost is projected to grow more rapidly than GDP for the foreseeable future.

The jump in projected Medicare spending visible over the next few years in Figure 8 represents the phasing in of this new program, which is projected to account for roughly one-fourth of all Medicare spending, and 1 percent of GDP, by 2015.¹¹ In present value, the program has added an estimated \$6.2 trillion dollars of implicit liability, net of premium payments by beneficiaries and projected contributions from states. This increment alone is larger in magnitude than the current explicit national debt.¹²

This episode highlights the problem of evaluating changes in the entitlement programs, like Medicare, that are occupying a growing share of federal spending. Like essentially all other components of spending, Medicare is accounted for on a cash basis, with trust fund accumulations duly recorded but increments to future liabilities ignored.

There is no ideal way to account for these liabilities. Treating them as equivalent to explicit debt suggests that they carry the same commitment, which they don't in a legal sense. But ignoring them suggests that they carry no commitment at all, which historically has certainly not been the case. Also, finding that the present value of a stream of future spending is very large does not imply that the spending is unwise or unsustainable; after all, the stream of future tax revenues is large in present value, as well. But a *change* in policy that increases future

¹¹ See the 2004 Medicare Trustees Report (Boards of Trustees, Federal HI and Federal SMI (2004)), Table II.A2.

¹² Medicare Trustees Report, Table II.C23.

spending commitments and provides no offset in the form of spending cuts or tax increases does worsen the government's fiscal position.

How one accounts for these large liabilities doesn't affect their magnitude, but it could affect policy decisions. Consider the illustrative calculations in Table 4, which update estimates in Auerbach (2002, 2003) and are explained in more detail there. For the debt of the OASDI system, the table presents annual estimates of the "closed-group" liability, equal to the present value of benefits less contributions for those aged 15 and over in the year of the calculation.¹³ This is one possible measure of the system's net liability, although there are others as well.

In the second column is the deficit, equal to the change in the debt from the beginning of the current year to the beginning of the next. The change in the closed-group liability from one year to the next equals the sum of two terms: increases in obligations to those remaining in the system plus the difference between liabilities to those entering the system and those leaving the system.

The next two columns provide a breakdown of the deficit into two exhaustive categories. The first of these categories, labeled "Base Year," measures what the deficit would have been

¹³ I am grateful to Kristy Piccinini for performing these calculations. The closed-group measures in Table 4 are somewhat lower for 2003 and 2004 than those provided by the corresponding Trustees Reports (\$11.9 trillion and \$12.7 trillion, respectively), presumably as the result of differences in assumed tax and benefit profiles. One cannot use the figures from the Trustees Reports to perform these calculations because they do not published for earlier years and do not offer a breakdown into the sources of change from one year to the next.

had no economic or demographic projections changed during that year; this measures the change in the debt holding projections fixed. The second, residual category measures the remaining portion of the deficit, due to changes in projections. This portion of the deficit is sometimes negative and sometimes positive, averaging -\$64 billion over the seven-year period. But the component due to the changing base year is always positive, and averages \$656 billion per year. This measure is positive and large, reflecting the fact that the retirement of the baby boom cohort is approaching.

Deficit estimates like these for the Medicare system likely would be considerably larger, given the relative magnitudes of the closed-group liabilities for the two systems. For the past year, this would be especially so, as the deficit would include the \$6.2 trillion unfunded liability of the new Medicare drug benefit.

Would there have been a substantial tax cut in 2001 if a budget deficit of several percent of GDP had been reported, rather than a budget surplus? Would Congress have added a prescription drug benefit to Medicare in 2003, with no offsetting spending reductions or tax increases, had the full cost of the change been featured in the debate?

V. Conclusion

During the past several decades, fiscal policy has responded to changing circumstances. Spending on defense has risen and fallen with national security needs, and old-age entitlement

programs have grown along with the aging and elderly populations. In the short run, spending and taxes have responded to cyclical and budget forces. But aging and increasing health care expenditures present unprecedented challenges to the fiscal system's ability to respond, for they generate a large sustainability gap that is not well-characterized by the traditional budget measures to which policy has responded in the past. The major fiscal changes required over the coming years may require changes in fiscal accounting as well.

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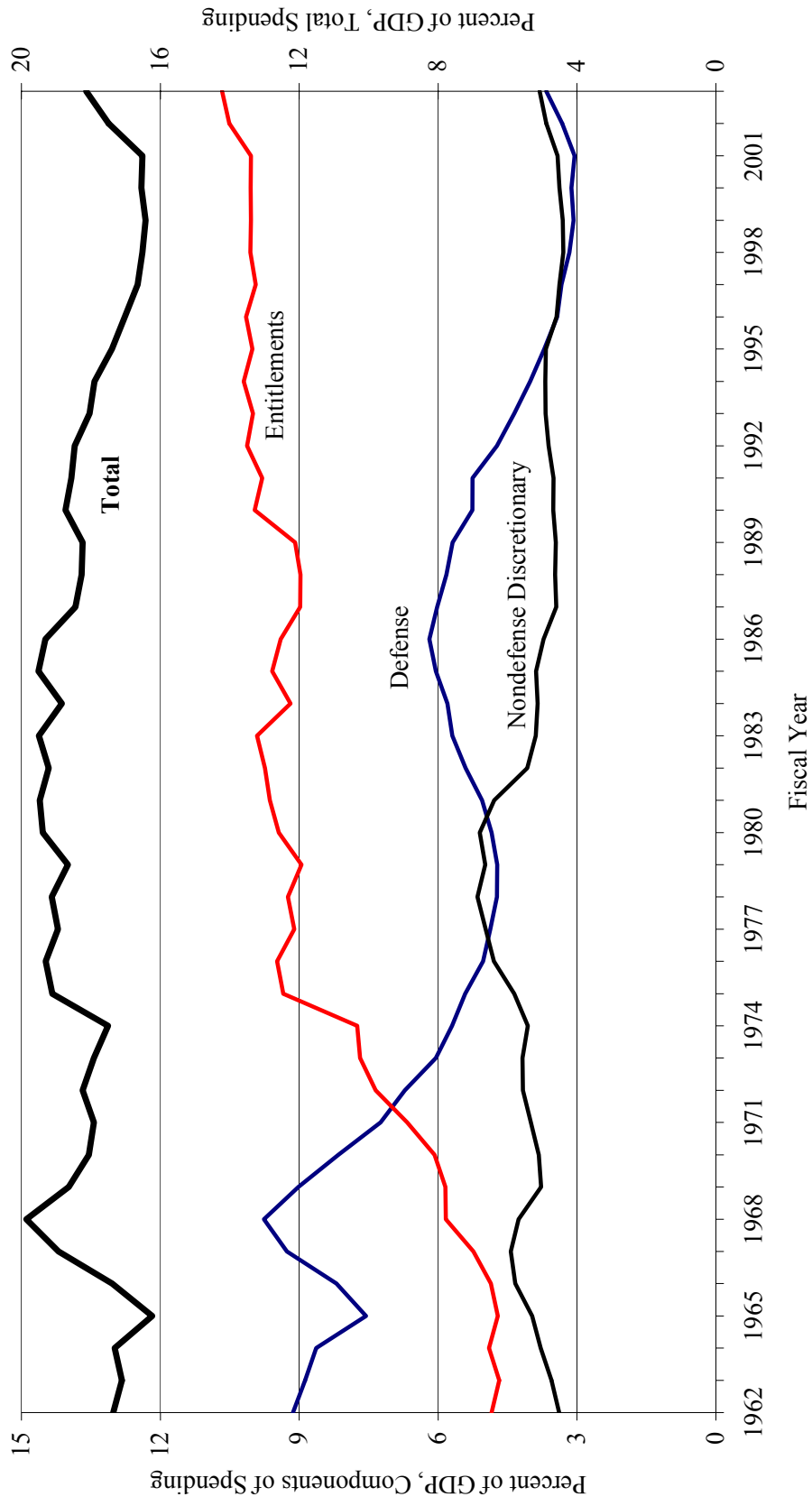
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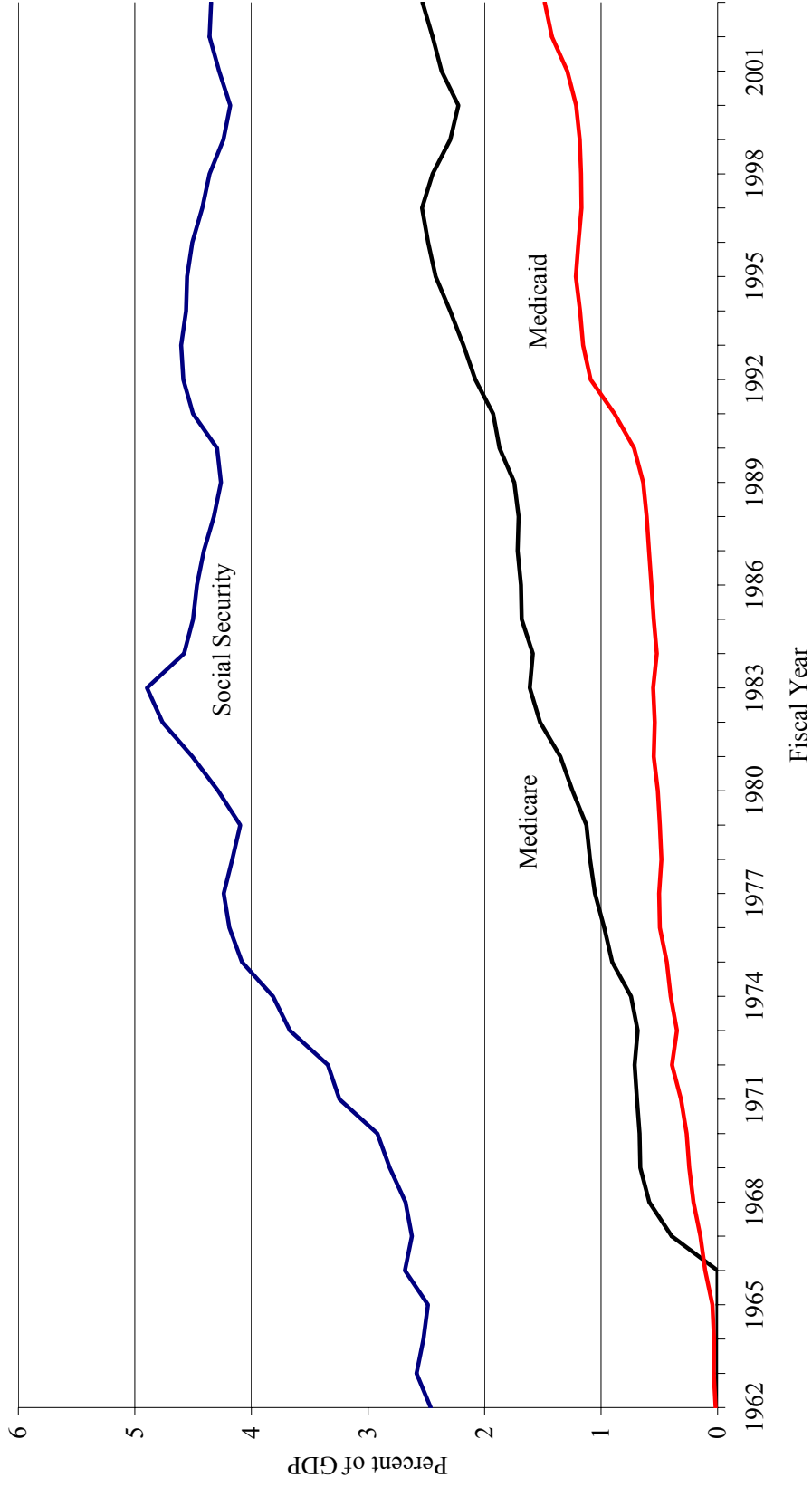
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Figure 1. Federal Non-Interest Spending as a Share of GDP



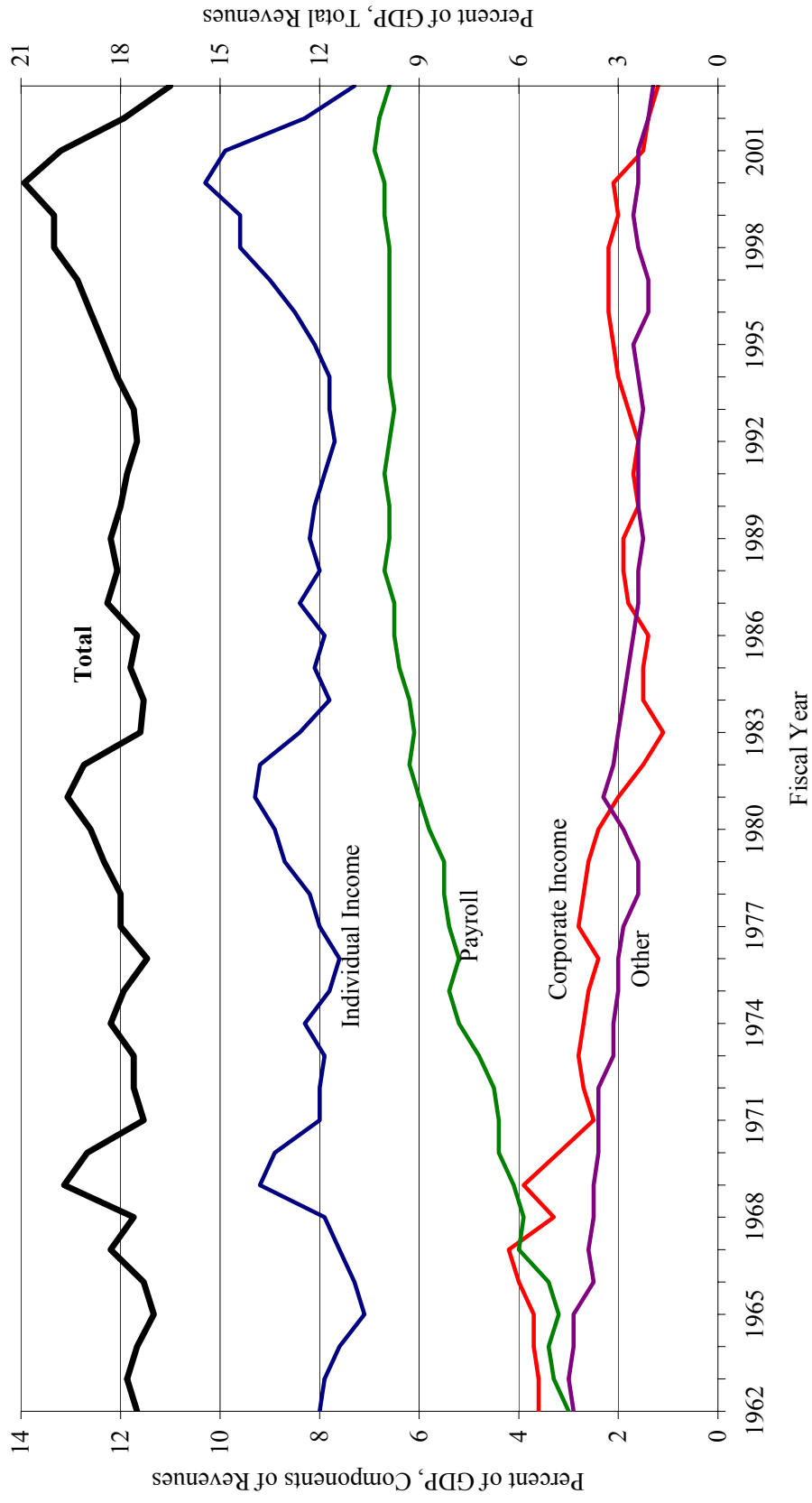
Source: Congressional Budget Office

Figure 2. Trends in Entitlement Spending



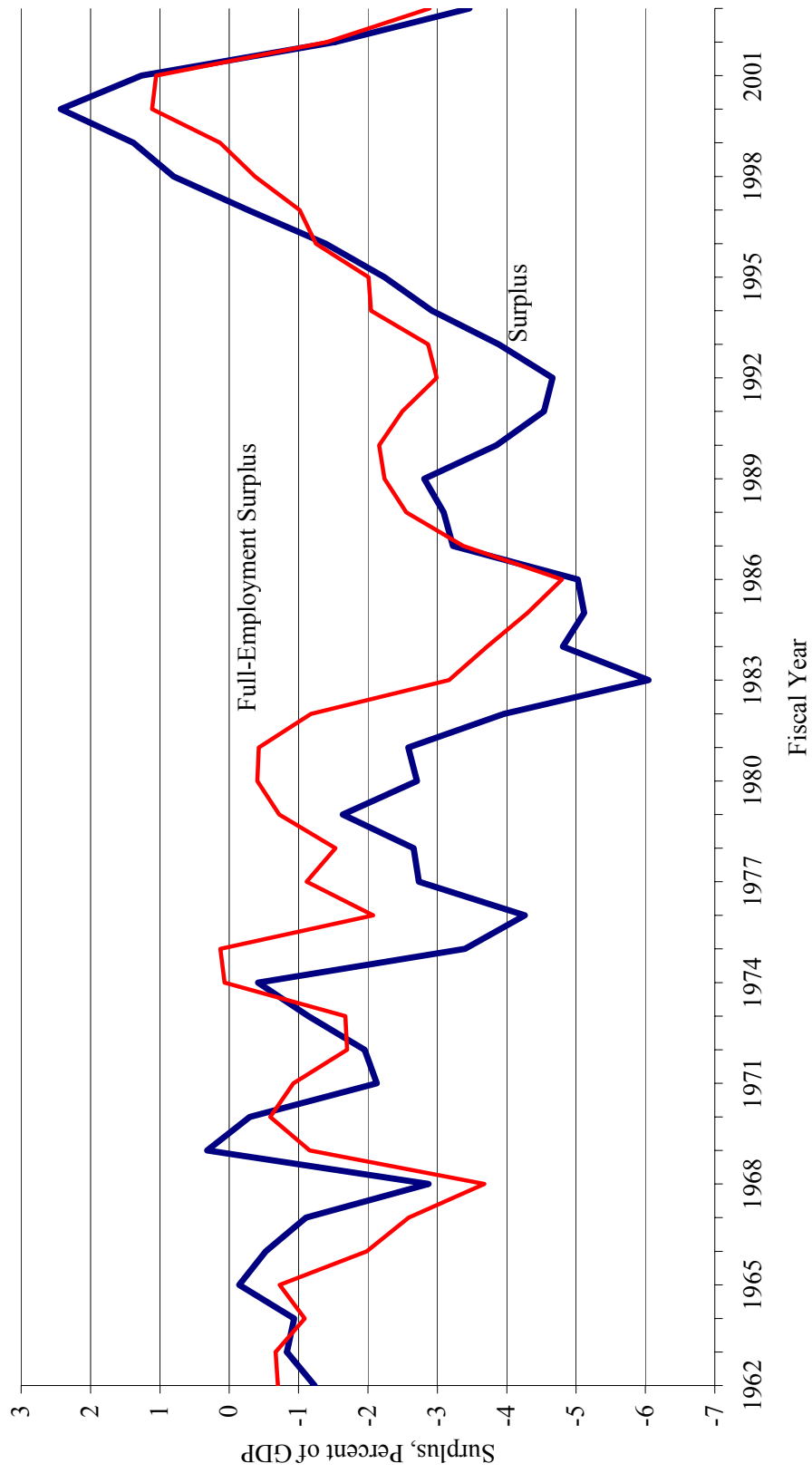
Source: Congressional Budget Office

Figure 3. Trends in Tax Revenues



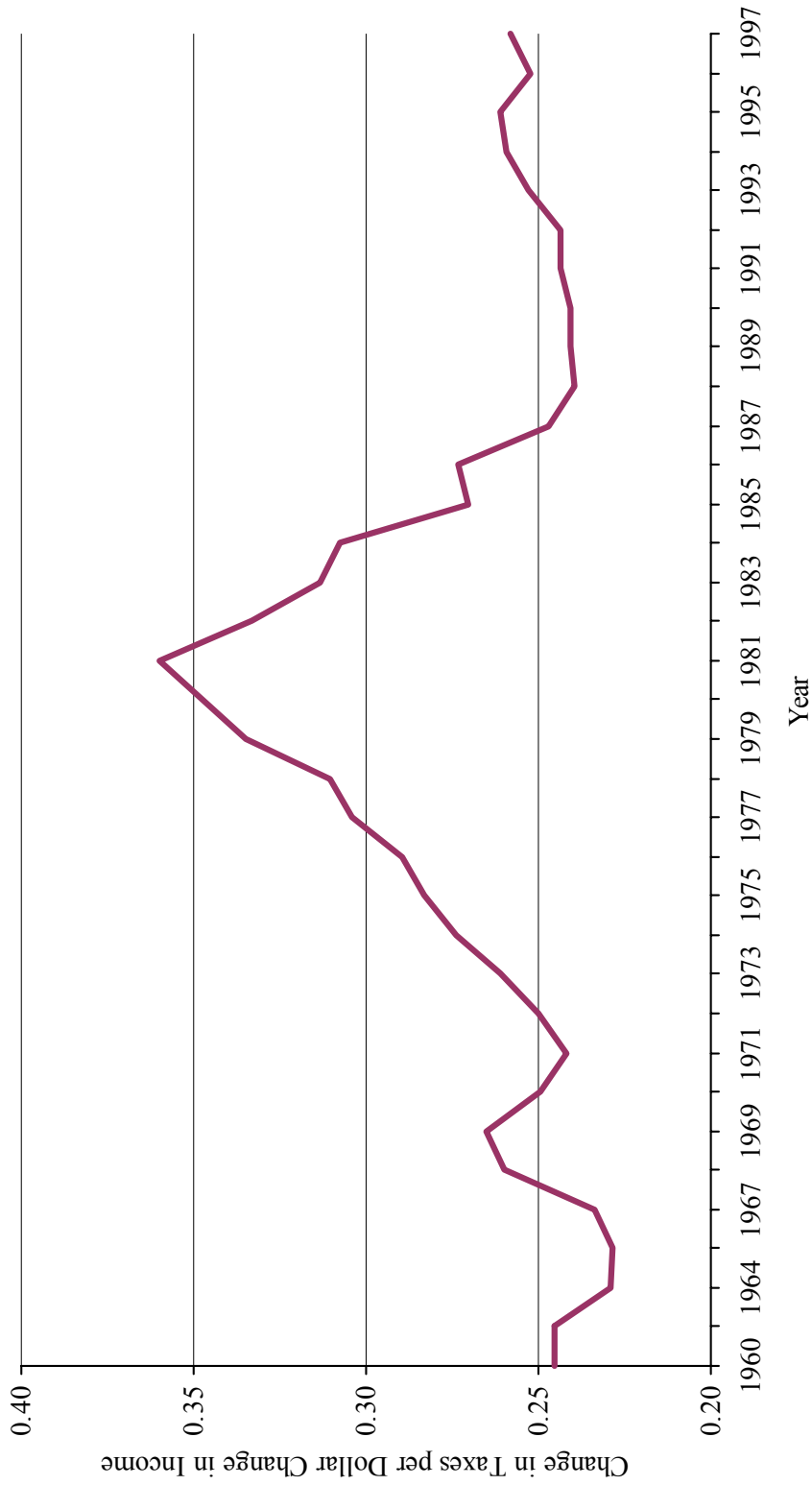
Source: Congressional Budget Office

Figure 4. Federal Budget Surplus, Relative to GDP



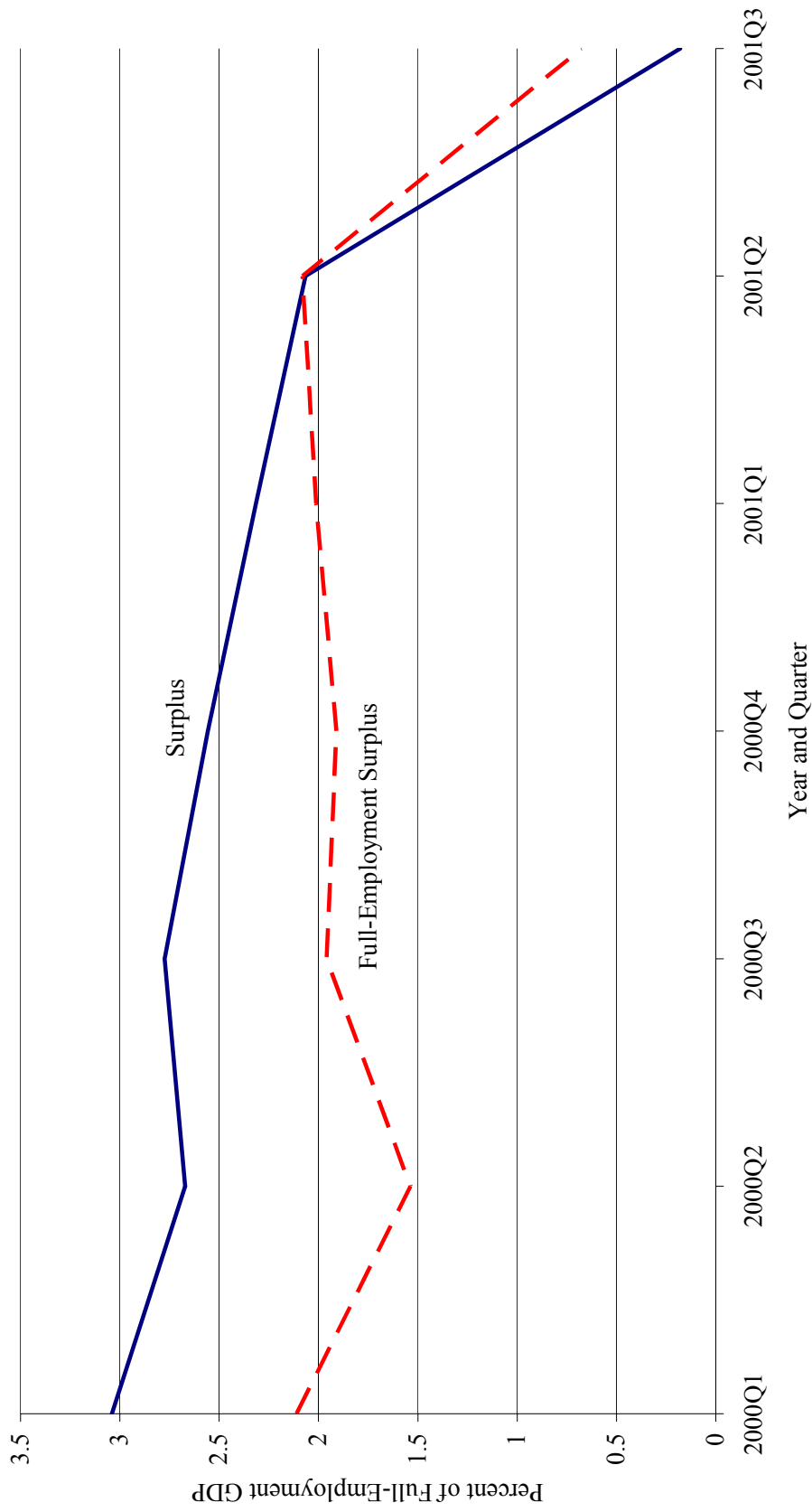
Source: Congressional Budget Office

Figure 5. Automatic Stabilizers: Individual Income and Payroll Taxes



Source: NBER TAXSIM model

Figure 6. The Budget Surplus and September 11



Source: Congressional Budget Office

Figure 7. Policy Residuals

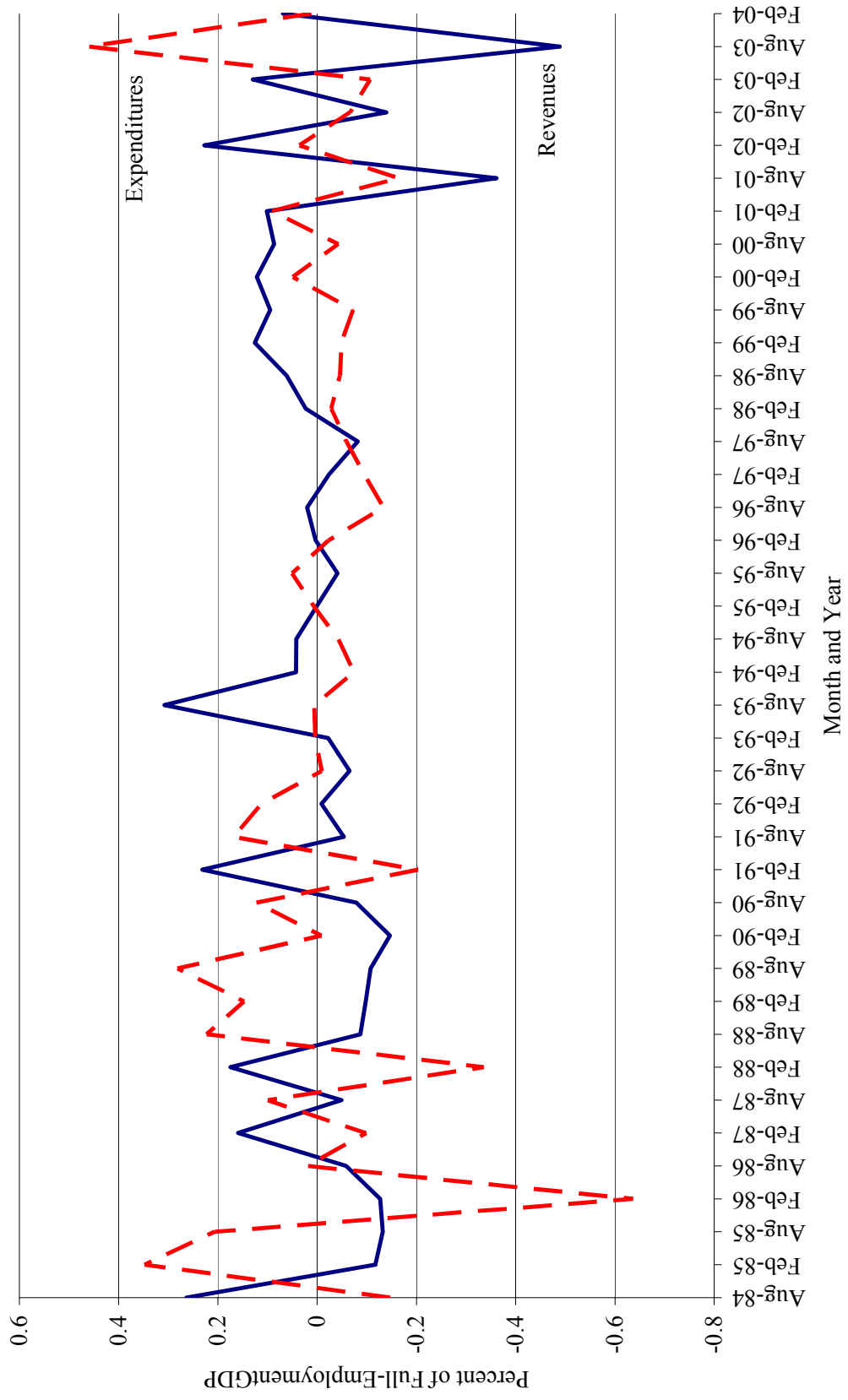
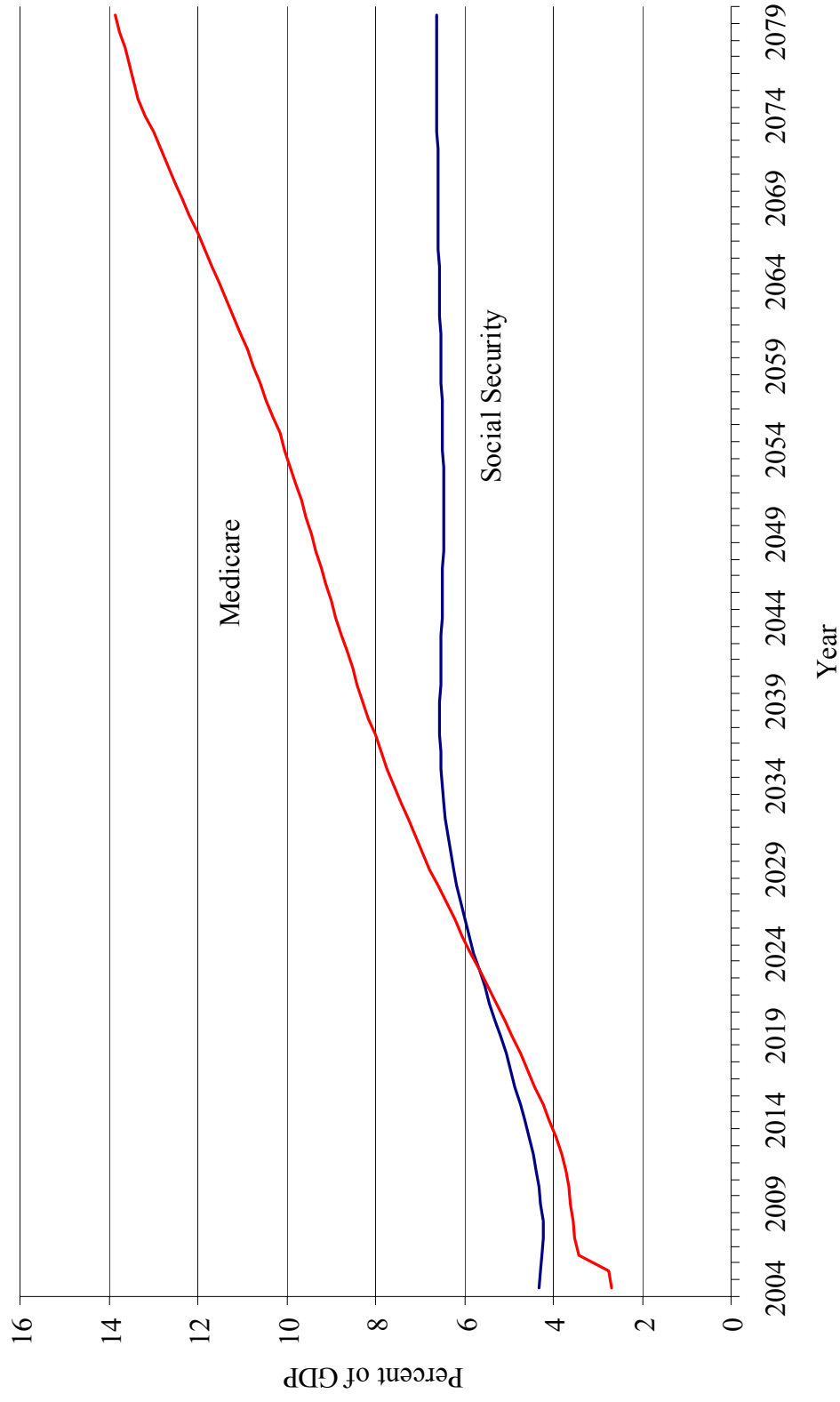


Figure 8. Social Security and Medicare Projections



Sources: Social Security – 2004 OASDI Trustees Report, Table VI.F.5; Medicare – 2004 Medicare Trustees Report, Table II.A.2 (interpolated after 2013).

Table 1. Determinants of Policy Changes, 1984-2004

Dependent Variable: Semiannual Policy Change in Revenues or Expenditures (Excluding Interest) Relative to Full-Employment GDP
(standard errors in parentheses)

Independent Variable	Sample Period and Dependent Variable:									
	1984:2—2004:1				1984:2—1993:1, 2001:2—2004:1				1993:2—2001:1	
	Revenues	Expenditures	Revenues	Expenditures	Revenues	Expenditures	Revenues	Expenditures	Revenues	Expenditures
Constant	-.001 (.0003)	.002 (.0005)	-.001 (.0004)	.002 (.004)	-.002 (.001)	.002 (.001)	-.0003 (.0005)	.001 (.0003)		
Budget Surplus (-1)	-.061 (.015)	.078 (.018)	--	--	--	--	--	--		
GDP Gap (-1)	-.052 (.021)	.076 (.026)	-.059 (.023)	.095 (.027)	-.046 (.029)	.096 (.039)	-.034 (.049)	.071 (.030)		
Projected Surplus	--	--	-.066 (.016)	.094 (.019)	-.084 (.021)	.098 (.028)	-.042 (.036)	.085 (.022)		
\bar{R}^2	.285	.291	.278	.366	.386	.331	.070	.656		
Number of Observations	40	40	40	40	24	24	16	16		

Data Source: Congressional Budget Office

Table 2. Fiscal Gaps

	Official Baseline		Adjusted Baseline	
	Through 2080	Permanent	Through 2080	Permanent
As a Percent of GDP	4.60	7.73	7.20	10.47
In Trillions of Present-Value Dollars	23.1	63.1	36.3	85.5

Source: Auerbach, Gale, and Orszag (2004)

Table 3. Determinants of Spending Changes, 1963-2004

Dependent Variable: Annual Change in Spending Component Relative to Full-Employment GDP
(standard errors in parentheses)

Independent Variable	Sample Period and Dependent Variable					
	1963-2003			1993-2003		
	All Discretionary	Nondefense Discretionary	Soc. Security/Medicare/Medicaid	All Discretionary	Nondefense Discretionary	Soc. Security/Medicare/Medicaid
Constant	-.0001 (.001)	.001 (.001)	.001 (.0004)	.002 (.001)	.001 (.0004)	.001 (.0005)
Budget Surplus (-1)	.057 (.049)	.051 (.022)	-.022 (.015)	.381 (.070)	.124 (.039)	.026 (.053)
GDP Gap (-1)	.024 (.038)	.024 (.017)	-.017 (.012)	.441 (.096)	.158 (.054)	.077 (.073)
\bar{R}^2	-.016	.071	.013	.754	.451	.146
Number of Observations	41	41	41	11	11	11

Data Source: Congressional Budget Office

Table 4. Implicit Debt and Deficits of the OASDI System

(billions of dollars)

Year	Debt	Deficit	Portion of Deficit Due to Change in	
			Base Year	Projections
1997	7,724	426	523	-97
1998	8,151	173	581	-408
1999	8,324	765	604	161
2000	9,089	878	677	201
2001	9,967	704	731	-27
2002	10,671	403	731	-328
2003	11,074	797	747	50
2004	11,871			

Source: Author's calculations